JP TRANSNAFTA
PETROLEUM PRODUCTS PIPELINE SYSTEM THROUGH SERBIA

October 2017
PUBLIC ENTERPRISE TRANSNAFTA – FACT SHEET

- Public enterprise founded by the Government of the Republic of Serbia in 2005
- Licensed for pipeline transport of crude oil and petroleum products as well as for storage of crude oil and petroleum products
- It operates on the route of ex-Yugoslav Oil Pipeline in length of 155 km from Croatian border to the oil refinery in Pančevo
- It supplies Pančevo Oil Refinery
- Total average transport volume – approx. 3 MTA (domestic production and imported crude oil)
PUBLIC ENTERPRISE TRANSNAFTA – INFRASTRUCTURE

- Oil pipeline in length of 155 km from Croatian border to the oil refinery in Pančevi
- Terminal in Novi Sad with four storage tanks for crude oil, 10,000 m³ each, distribution center and pumping station
- Metering station in Pančevi
- Eight block stations along the oil pipeline route
MODES OF TRANSPORTATION OF MOTOR FUELS IN SERBIA

Conventional modes of transport: roads, railways, waterways

*Distribution of different transport modes in the total transport of motor fuels in Serbia*

- **Roads - tank trucks**: 65.4%
- **Rivers**: 26.0%
- **Railways**: 8.6%

- In 2016 in Serbia was consumed around 2.5 million tons of motor fuels (gasoline and diesel)
- The rate of growth in consumption of motor fuels in Serbia is 3-4% per annum
**WHY PRODUCT PIPELINE?**

- Pipeline transport is the most efficient and cost-effective, environmentally-safe and most acceptable mode of transport.
- Maximum security of supply – “just in time” delivery.
- Minimum transport price.
- Reduction of environment polution (soil, water and air).
- Prevention of supply disturbance on state/regional level.
- Possibility of regional states cooperation and market expansion.
- Employment, regional development.
- Obligatory ADN Agreement which regulates the transport of motor fuels by barges with double bottoms on inland waterways will greatly increase costs of river transport.
PETROLEUM PRODUCTS PIPELINE SYSTEMS IN SURROUNDING COUNTRIES

Hungary 1200 km
Romania 1429 km
Bulgaria 525 km
Single pipeline transport for gasoline and diesel

- Total length: 402km
- Total capacity: 4,3 Mt/y

Transport routes:
1. Pančevo – Smederevo – Jagodina – Niš
2. Pančevo – Novi Sad – Sombor
3. Pančevo – Beograd

I FACILITY
- Sections Pančevo – Novi Sad
  Pančevo – Smederevo

II FACILITY
- Sections Smederevo – Jagodina
  Jagodina – Niš

III FACILITY
- Sections Pančevo – Beograd (optional)
  Novi Sad – Sombor (optional, as interconnections with Hungary and Croatia)
Petroleum products pipeline distribution plan

Product pipeline system gives opportunities for possible regional interconnection, that is supported by the Treaty Establishing the Energy Community of the Countries in South East Europe.

The possibility of interconnection of petrochemical product pipelines for placement of petroleum products from Pančevo Oil Refinery to Romanian market is also considered. In the previous period these product pipelines were used for transport of propylene and ethylene.
PRODUCT PIPELINE SYSTEM THROUGH SERBIA

I. FACILITY: SECTIONS PANČEVO – NOVI SAD AND PANČEVO - SMEDEREVO

• I Phase 32,8 mil EUR:
  – Terminal Pančevo
  – Section Pančevo – Smederevo
  – Terminal Smederevo
  – Section Pančevo – Novi Sad
  – Terminal Novi Sad

• II Phase 18,3 mil EUR:
  – Tanks 4x5.000 m³ for diesel and 4x5.000m³ for gasoline at Pančevo Terminal
  – Tanks 2x13.000 m³ for diesel and 2x5.000 m³ for gasoline at Smederevo Terminal

• III Phase 6,2 mil EUR:
  – Pump station at Smederevo Terminal for delivery towards Jagodina
  – Pump station at Novi Sad Terminal for delivery towards Sombor (optional)
PRODUCT PIPELINE SYSTEM – FIRST FACILITY:
Pipeline sections Pančevo-Smederevo and Pančevo-Novis Sad

Pančevo – Smederevo Section

Length: approx 26.9 km
Pipeline diameter: 12”
Route: parallel to gas pipeline RG-01-10

Danube River crossing

- Pančevo Terminal
  - pumping station
  - metering station
  - tanks

- Smederevo Terminal
  - pumping station
  - metering station
  - tanks

Pančevo – Novi Sad Section

Length: 91.4 km
Pipeline diameter: 10”
Route: parallel to existing crude oil pipeline

3 river crossings (Tisa and Tamiš)

- Pančevo Terminal
  - pumping station
  - metering station
  - tanks

- Novi Sad Terminal
  - existing tanks RNS
  - pumping station
  - metering station
Supply of districts from terminals:

<table>
<thead>
<tr>
<th>District</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smederevo</td>
<td>Mačva, Kolubara, Šumadija, Podunavlje, Braničevo and 50% City of Belgrade;</td>
</tr>
<tr>
<td>Jagodina</td>
<td>Zaječar, Bor, Pomoravlje, Rasina, Raška, Morava and Zlatibor;</td>
</tr>
<tr>
<td>Niš</td>
<td>Niš, Toplica, Pirot, Jablanica and Pčinj;</td>
</tr>
<tr>
<td>Novi Sad</td>
<td>City of Novi Sad, South Bačka, Srem, North Bačka, Western Bačka, North Banat, Middle Banat;</td>
</tr>
</tbody>
</table>

From Niš Terminal, as it was planned, 50% of Kosovo market and 5% of the market of Macedonia will be also supplied. In addition, it is also planned to supply 6% of Bulgarian market (according to the Study on motor fuel consumption,"Konzit" 2006).
CONSTRUCTION OF PRODUCT PIPELINE SECTIONS:
Pančevo-Smederevo and Pančevo-Novi Sad
Cost Estimation for Construction Phase I

- Construction in three phases:
  
  **PHASE I:** construction of petroleum products pipeline connecting oil refinery in Pančevo with existing tanks in Smederevo and Novi Sad
  
  **PHASE II:** construction of new tanks in Pančevo and Smederevo
  
  **PHASE III:** new pumps for transport to Jagodina and Sombor

**PHASE I – cost estimation:**

<table>
<thead>
<tr>
<th></th>
<th>Material (€)</th>
<th>Construction (€)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. PIPE ROUTING</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Section Pa-Sd DN 300</td>
<td>7.653.794</td>
<td>10.253.059</td>
</tr>
<tr>
<td>Section Pa-NS DN 250</td>
<td>2.132.303</td>
<td>2.579.290</td>
</tr>
<tr>
<td>Block station</td>
<td>4.806.933</td>
<td>7.430.493</td>
</tr>
<tr>
<td></td>
<td>714.558</td>
<td>243.276</td>
</tr>
<tr>
<td><strong>2. TERMINALS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pančevo Terminal</td>
<td>8.973.578</td>
<td>2.399.358</td>
</tr>
<tr>
<td>Smederevo Terminal</td>
<td>6.861.801</td>
<td>1.737.448</td>
</tr>
<tr>
<td>Novi Sad Terminal</td>
<td>1.441.955</td>
<td>484.201</td>
</tr>
<tr>
<td></td>
<td>669.822</td>
<td>177.709</td>
</tr>
<tr>
<td><strong>3. OTHER COSTS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>2.440.000</td>
</tr>
<tr>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Investment cost including engineering (3%) – total (excluding VAT)

**PHASE I – only Pančevo-Smederevo section – cost estimation of cca 18.000.000 EUR is including Pančevo Terminal, product pipeline route to Smederevo and metering station in Smederevo**
PRODUCT PIPELINES
Smederevo-Jagodina and Jagodina-Niš Sections

Smederevo-Jagodina Section

Length: approx 92.3 km
Pipeline diameter: 12"
Route: parallel to gas pipelines RG-08-01 and MG-08

Velika Morava river crossing
Bagrdan mountain crossing

- Jagodina Terminal
  - pumping station
  - metering station
  - tanks

Jagodina-Niš Section

Length: approx 102.1 km
Pipeline diameter: 10"
Route: parallel to gas pipelines MG-08, MG-09 and RG-09-01

2 Južna Morava river crossings
“Mečka” mountain crossing

- Niš Terminal
  - metering station
PRODUCT PIPELINES - optional
Novi Sad-Sombor and Pančevo-Beograd Sections

Novi Sad-Sombor Section

Length: approx. 92.2 km
Pipeline diameter: 8”
Route: parallel to gas pipeline RG-04-15 and E-75 highway
4 DTD irrigation canal crossings

- **Novi Sad Terminal - optional**
  - pumping station
  - metering station

- **Sombor Terminal - optional**
  - metering station
  - tanks

Pančevo-Beograd Section
optional

Length: approx. 10-20 km
(depending on selection of terminal location)
Pipeline diameter: 8”

- Danube river crossing

- **Pančevo Terminal**
  - pumping station
  - metering station
  - tanks

- **Beograd Terminal - optional**
# RESUME OF THE FEASIBILITY STUDY – I PHASE

## Income Statement (2022 year) [000 €]

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total income</td>
<td>5,558</td>
</tr>
<tr>
<td>Total expenses</td>
<td>3,184</td>
</tr>
<tr>
<td>Operating costs</td>
<td>764</td>
</tr>
<tr>
<td>Electricity variable costs</td>
<td>176</td>
</tr>
<tr>
<td>Electricity fixed costs</td>
<td>58</td>
</tr>
<tr>
<td>Employees salaries gross</td>
<td>198</td>
</tr>
<tr>
<td>Other fixed business costs</td>
<td>333</td>
</tr>
<tr>
<td>Amortization</td>
<td>1,539</td>
</tr>
<tr>
<td>External financing costs</td>
<td>880</td>
</tr>
<tr>
<td><strong>Profit before taxation</strong></td>
<td>2,374</td>
</tr>
<tr>
<td>Income tax</td>
<td>237</td>
</tr>
<tr>
<td><strong>Net profit</strong></td>
<td>2,137</td>
</tr>
</tbody>
</table>

## Project Economic and Financial Assessment (DR = 5%)

- **Net present value**: 48,25 mil €
- **Internal rate of return**: 13,15%
- **Return of investment (dynamic)**: 10,2 years

## Project Social Rentability (SDR = 5%)

- **Net present value**: 63,4 mil €
- **Social rate of return**: 15,2%
- **Return of investment (dynamic)**: 9,2 years

## Sensitivity analysis (dynamic): Rentability limit based on discounted flow (NPV=0)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Change</th>
<th>Projected</th>
<th>After change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Investment (mil €)</td>
<td>163,0 %</td>
<td>32,86</td>
<td>86,4</td>
</tr>
<tr>
<td>Average sale price (€/t)</td>
<td>-54,0 %</td>
<td>2,91</td>
<td>1,34</td>
</tr>
<tr>
<td>Operating costs (mil €)</td>
<td>414,6 %</td>
<td>0,77</td>
<td>3,96</td>
</tr>
<tr>
<td>Volume of pipeline transport (t/y)</td>
<td>-56,3 %</td>
<td>1,957,201</td>
<td>854,842</td>
</tr>
</tbody>
</table>

## Projected volume of pipeline transport (000 t/y)

<table>
<thead>
<tr>
<th>Section</th>
<th>2014</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pančevo-Smederevo section</td>
<td>991</td>
<td>1,215</td>
</tr>
<tr>
<td>Pančevo-Novi Sad section</td>
<td>567</td>
<td>695</td>
</tr>
</tbody>
</table>
PETROLEUM PRODUCTS PIPELINE SYSTEM THROUGH SERBIA
Activities on the Project Implementation

Done
- Prefeasibility Study with General Design for all pipeline sections
- Signing up MoU
- Completion and adoption of the Spatial Plan of Special Purpose Area for Petroleum Products Pipeline System through Serbia
- Feasibility Study with Basic Design and EIA Study for Pančevo-Novisad and Pančevo-Smederevo pipeline sections
- Cadastral Study (NS-PA-SD)
- Proclamation on Public interest for the partial expropriation
- Detailed Regulation Plan for the central complex of Pančevo Terminal
- Signing of Letter of Intent on using system with NIS-Gaspromneft
- Location permit for the I Facility
- Submitted request for construction permit for the I Facility of the product pipeline

To be done
- Detailed Design for Pančevo-Smederevo Section (in progress)
- Next steps would include procurement & construction, commissioning & start up
Thank you for your attention!

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